

SUPPORT FOR THE AMENDMENTS

The specification has been amended to replace the title and the abstract. Newly-added Claims 84-126 are supported by the specification and the original claims. Accordingly, no new matter is believed to have been added to the present application by the amendments submitted above.

REMARKS

Claims 84-126 are pending. Favorable reconsideration is respectfully requested.

The present invention relates to a process for producing an alumina coating comprised mainly of α crystal structure, comprising:

coating a base material with a metal component comprising Al and Ti and one or more of B, C, N and O to form a primary coating,

oxidizing the primary coating to form an oxide-containing layer, and

forming an alumina coating comprised mainly of α crystal structure on the oxide-containing layer.

See Claim 84.

The present invention also relates to a process for producing an alumina coating comprised mainly of α crystal structure, comprising:

coating a base material with a metal component comprising Al and one or more of B, C, N and O to form a primary coating,

oxidizing the primary coating to form an oxide-containing layer, and

forming an alumina coating comprised mainly of α crystal structure on the oxide-containing layer.

See Claim 89.

An important feature of the claimed process is that the primary coating contains, *inter alia*, a metal component comprising Al and one or more of B, C, N and O. This is significant because the presence of Al in the primary coating allows for formation of the specified alumina layer in a low temperature range-- i.e., 800°C or lower.

The present invention also relates to a process for producing an alumina coating comprised mainly of α crystal structure. See independent Claims 91, 97, 102 and 107. The present invention also provides an alumina coating. See Claim 111.

The rejections of the claims under 35 U.S.C. §103(a) over Ishii et al. (6,156,383) alone or in combination with Connell et al. (4,310,614) are respectfully traversed. The cited references fail to suggest the claimed process.

Ishii et al. disclose a tool coated with alumina in which the outer layer is an oxide layer composed substantially of α alumina. Below the oxide layer is a bonding layer is composed of an oxide, oxycarbide, oxynitride or oxycarbonitride of a metal from the Group IVa, Va or VIa, and a non-oxide layer composed of a carbide, nitride or carbonitride of a metal from the Group IVa, Va or VIa. See the Abstract. A preferred metal is Ti. See column 2, lines 54-60.

Since Al belongs to Group IIIb, Ishii et al. provide no suggestion for the claimed process which specifies forming the primary coating containing a metal component comprising Al and one or more of B, C, N and O. In addition, the reference fails to suggest that the alumina can be deposited at a relatively low temperature, i.e., 800°C or lower. In fact, Ishii et al. disclose a temperature range that is much higher: 980 to 1020°C. See column 6, lines 47-50.

Connell et al. has been cited for its description of certain process steps. However, that reference fails to suggest a process involving a primary coating containing a metal component comprising Al and one or more of B, C, N and O as claimed.

In view of the foregoing, Ishii et al. alone or in combination with Connell et al. fails to suggest the claimed invention. Accordingly, the claims are not obvious over those references. Withdrawal of this ground of rejection is respectfully requested.

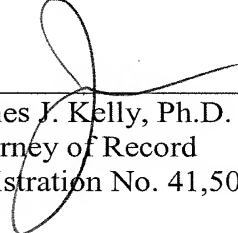
The obviousness-type double patenting rejections over the claims of U.S. patent No. 7,241,492 and application serial No. 11/350,007 are obviated by the Terminal Disclaimer submitted herewith.

The rejection of the claims under 35 U.S.C. §112, second paragraph, is believed to be obviated by the amendments submitted above. The issues raised by the Examiner are believed to be addressed in the newly-added claims. Thus, Applicants submit that the claims are definite within the meaning of 35 U.S.C. §112, second paragraph. Accordingly, withdrawal of this ground of rejection is respectfully requested.

Applicants submit that the present application is in condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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